



Volunteer Lake Assessment Program Individual Lake Reports

MARTIN MEADOW POND, LANCASTER, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	960	Max. Depth (m):	9.1	Flushing Rate (yr ⁻¹)	0.9
Surface Area (Ac.):	118	Mean Depth (m):	4.1	P Retention Coef:	0.71
Shore Length (m):	3,200	Volume (m ³):	1,954,000	Elevation (ft):	1068

TROPHIC CLASSIFICATION

Year	Trophic class
1994	MESOTROPHIC
2008	MESOTROPHIC

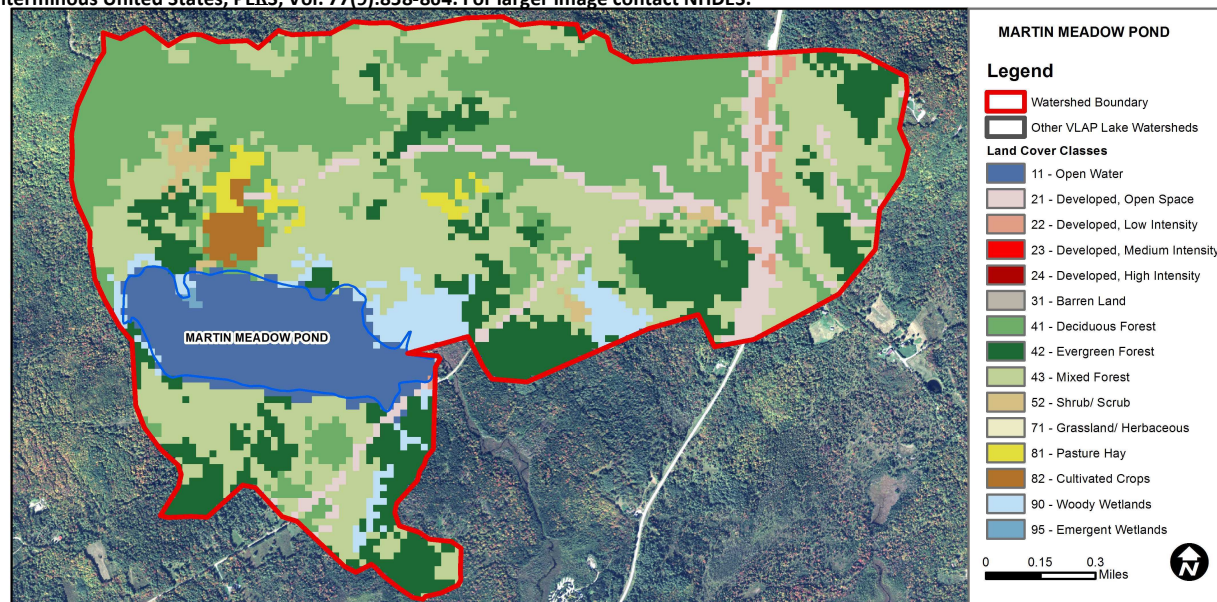
KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Slightly Bad	>=5 samples and median is >threshold.
	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	D.O. (mg/L)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	D.O. (% sat)	Cautionary	< 10 samples and 1 exceedance of criteria. More data needed.
	Chlorophyll-a	Slightly Bad	>5 samples and median is > threshold.
Primary Contact Recreation	E. coli	Very Good	All bacteria samples <75% of geometric mean criteria, but not enough to calculate geometric mean. Or, all bacteria samples are < single sample criteria and calculated Geometric means are less than geometric mean criteria.
	Cyanobacteria	Slightly Bad	Cyanobacteria bloom(s).
	Chlorophyll-a	Good	At least 10 samples with 1 sample but < 10% of samples exceeding criteria.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	9.7	Barren Land	0	Grassland/Herbaceous	0
Developed-Open Space	4.96	Deciduous Forest	29.52	Pasture Hay	1.17
Developed-Low Intensity	1.06	Evergreen Forest	15.78	Cultivated Crops	1.04
Developed-Medium Intensity	0	Mixed Forest	31.87	Woody Wetlands	4.02
Developed-High Intensity	0	Shrub-Scrub	0.87	Emergent Wetlands	0.08



VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

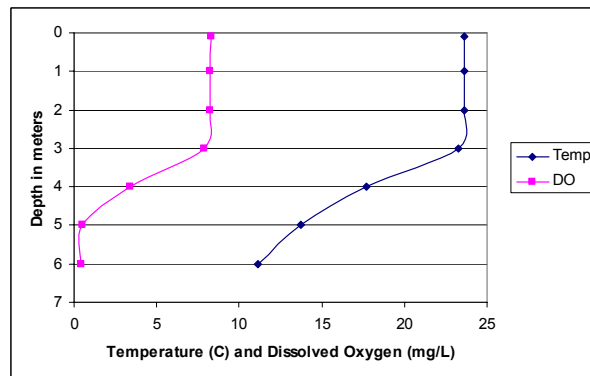
MARTIN MEADOW POND, LANCASTER, NH

2012 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (Refer to Table 1 and Historical Deep Spot Data Graphic)

- 🔥 **CHLOROPHYLL-A:** Chlorophyll levels decreased from 2011 and were less than the NH lake median. Historically, chlorophyll levels have fluctuated and have been elevated on several occasions.
- 🔥 **CONDUCTIVITY/CHLORIDE:** Conductivity levels were slightly elevated and greater than the NH lake median.
- 🔥 **E. COLI:** E. coli levels were much less than the state standards for public beaches and surface waters.
- 🔥 **TOTAL PHOSPHORUS:** Epilimnetic (upper water layer) phosphorus levels were slightly greater than the NH lake median and have been higher than normal since 2011. Near shore phosphorus levels were low.
- 🔥 **TRANSPARENCY:** Transparency improved in 2012 likely due to the decrease in algal growth as reflected in the lower chlorophyll levels.
- 🔥 **TURBIDITY:** Turbidity levels were low at all stations.
- 🔥 **pH:** pH levels were sufficient to support aquatic life, however have historically been at critical levels.
- 🔥 **RECOMMENDED ACTIONS:** Increase monitoring frequency to three times per summer to better assess summer water quality and historical trends. Conduct chloride monitoring to establish a baseline and help assess its influence on conductivity levels.

Dissolved Oxygen & Temperature Profile



Station Name	Table 1. 2012 Average Water Quality Data for MARTIN MEADOW POND								
	Alk.	Chlor-a	Cond.	E. Coli	Total P	Trans.		Turb.	pH
	mg/l	ug/l	uS/cm	#/100ml	ug/l	m		ntu	
						NVS	VS		
Deep Epilimnion	16.2	3.64	92.8		13	3.13	3.63	0.67	7.42
Deep Hypolimnion			93.9		11			0.83	6.76
Mccarten			92.1	1	6			0.63	7.50
Weeks			92.0	1	7			0.67	7.45
Whithed			92.2		8			0.70	7.49

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.

Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m³
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.

Chloride: < 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: 6.5-8.0 (unless naturally occurring)

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation
Chlorophyll-a	N/A	More data necessary to establish trend.
Transparency	N/A	More data necessary to establish trend.
Phosphorus (epilimnion)	N/A	More data necessary to establish trend.

This report was generated by the NH DES Volunteer Lake Assessment Program (VLAP). For more information contact:
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Historical Deep Spot Chlorophyll-a, Epilimnetic Total Phosphorus & Transparency Data

